

SEQUENCE LISTING

<110> Schneider, Michael
Oh, Hidemasa

<120> Modulators of Telomere Stability

<130> HO-P02673US1

<140> Not Assigned

<141> 2004-04-08

<150> US 60/461,095

<151> 2003-04-08

<160> 24

<170> PatentIn version 3.1

<210> 1

<211> 500

<212> PRT

<213> Human

<400> 1

Met Ala Gly Gly Gly Gly Ser Ser Asp Gly Ser Gly Arg Ala Ala Gly
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Arg Arg Ala Ser Arg Ser Ser Gly Arg Ala Arg Arg Gly Arg His Glu
20 25 30

Pro Gly Leu Gly Gly Pro Ala Glu Arg Gly Ala Gly Glu Ala Arg Leu
35 40 45

Glu Glu Ala Val Asn Arg Trp Val Leu Lys Phe Tyr Phe His Glu Ala
50 55 60

Leu Arg Ala Phe Arg Gly Ser Arg Tyr Gly Asp Phe Arg Gln Ile Arg
65 70 75 80

Asp Ile Met Gln Ala Leu Leu Val Arg Pro Leu Gly Lys Glu His Thr
85 90 95

Val Ser Arg Leu Leu Arg Val Met Gln Cys Leu Ser Arg Ile Glu Glu
100 105 110

Gly Glu Asn Leu Asp Cys Ser Phe Asp Met Glu Ala Glu Leu Thr Pro
115 120 125

Leu Glu Ser Ala Ile Asn Val Leu Glu Met Ile Lys Thr Glu Phe Thr
130 135 140

Leu Thr Glu Ala Val Val Glu Ser Ser Arg Lys Leu Val Lys Glu Ala
 145 150 155 160

Ala Val Ile Ile Cys Ile Lys Asn Lys Glu Phe Glu Lys Ala Ser Lys
 165 170 175

Ile Leu Lys Lys His Met Ser Lys Asp Pro Thr Thr Gln Lys Leu Arg
 180 185 190

Asn Asp Leu Leu Asn Ile Ile Arg Glu Lys Asn Leu Ala His Pro Val
 195 200 205

Ile Gln Asn Phe Ser Tyr Glu Thr Phe Gln Gln Lys Met Leu Arg Phe
 210 215 220

Leu Glu Ser His Leu Asp Asp Ala Glu Pro Tyr Leu Leu Thr Met Ala
 225 230 235 240

Lys Lys Ala Leu Lys Ser Glu Ser Ala Ala Ser Ser Thr Gly Lys Glu
 245 250 255

Asp Lys Gln Pro Ala Pro Gly Pro Val Glu Lys Pro Pro Arg Glu Pro
 260 265 270

Ala Arg Gln Leu Arg Asn Pro Pro Thr Thr Ile Gly Met Met Thr Leu
 275 280 285

Lys Ala Ala Phe Lys Thr Leu Ser Gly Ala Gln Asp Ser Glu Ala Ala
 290 295 300

Phe Ala Lys Leu Asp Gln Lys Asp Leu Val Leu Pro Thr Gln Ala Leu
 305 310 315 320

Pro Ala Ser Pro Ala Leu Lys Asn Lys Arg Pro Arg Lys Asp Glu Asn
 325 330 335

Glu Ser Ser Ala Pro Ala Asp Gly Glu Gly Gly Ser Glu Leu Gln Pro
 340 345 350

Lys Asn Lys Arg Met Thr Ile Ser Arg Leu Val Leu Glu Glu Asp Ser
 355 360 365

Gln Ser Thr Glu Pro Ser Ala Gly Leu Asn Ser Ser Gln Glu Ala Ala
 370 375 380

Ser Ala Pro Pro Ser Lys Pro Thr Val Leu Asn Gln Pro Leu Pro Gly
 385 390 395 400

Glu Lys Asn Pro Lys Val Pro Lys Gly Lys Trp Asn Ser Ser Asn Gly
 405 410 415

Val Glu Glu Lys Glu Thr Trp Val Glu Glu Asp Glu Leu Phe Gln Val
 420 425 430

Gln Ala Ala Pro Asp Glu Asp Ser Thr Thr Asn Ile Thr Lys Lys Gln
 435 440 445

Lys Trp Thr Val Glu Glu Ser Glu Trp Val Lys Ala Gly Val Gln Lys
 450 455 460

Tyr Gly Glu Gly Asn Trp Ala Ala Ile Ser Lys Asn Tyr Pro Phe Val
 465 470 475 480

Asn Arg Thr Ala Val Met Ile Lys Asp Arg Trp Arg Thr Met Lys Arg
 485 490 495

Leu Gly Met Asn
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 <211> 543
 <212> PRT
 <213> Human

<400> 2

Met Ser Arg Glu Ser Asp Val Glu Ala Gln Gln Ser His Gly Ser Ser
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Ala Cys Ser Gln Pro His Gly Ser Val Thr Gln Ser Gln Gly Ser Ser
 20 25 30

Ser Gln Ser Gln Gly Ile Ser Ser Ser Ser Thr Ser Thr Met Pro Asn
 35 40 45

Ser Ser Gln Ser Ser His Ser Ser Ser Gly Thr Leu Ser Ser Leu Glu
 50 55 60

Thr Val Ser Thr Gln Glu Leu Tyr Ser Ile Pro Glu Asp Gln Glu Pro
 65 70 75 80

Glu Asp Gln Glu Pro Glu Glu Pro Thr Pro Ala Pro Trp Ala Arg Leu
 85 90 95

Trp Ala Leu Gln Asp Gly Phe Ala Asn Leu Glu Cys Val Asn Asp Asn
100 105 110

Tyr Trp Phe Gly Arg Asp Lys Ser Cys Glu Tyr Cys Phe Asp Glu Pro
115 120 125

Leu Leu Lys Arg Thr Asp Lys Tyr Arg Thr Tyr Ser Lys Lys His Phe
130 135 140

Arg Ile Phe Arg Glu Val Gly Pro Lys Asn Ser Tyr Ile Ala Tyr Ile
145 150 155 160

Glu Asp His Ser Gly Asn Gly Thr Phe Val Asn Thr Glu Leu Val Gly
165 170 175

Lys Gly Lys Arg Arg Pro Leu Asn Asn Asn Ser Glu Ile Ala Leu Ser
180 185 190

Leu Ser Arg Asn Lys Val Phe Val Phe Phe Asp Leu Thr Val Asp Asp
195 200 205

Gln Ser Val Tyr Pro Lys Ala Leu Arg Asp Glu Tyr Ile Met Ser Lys
210 215 220

Thr Leu Gly Ser Gly Ala Cys Gly Glu Val Lys Leu Ala Phe Glu Arg
225 230 235 240

Lys Thr Cys Lys Lys Val Ala Ile Lys Ile Ile Ser Lys Arg Lys Phe
245 250 255

Ala Ile Gly Ser Ala Arg Glu Ala Asp Pro Ala Leu Asn Val Glu Thr
260 265 270

Glu Ile Glu Ile Leu Lys Lys Leu Asn His Pro Cys Ile Ile Lys Ile
275 280 285

Lys Asn Phe Phe Asp Ala Glu Asp Tyr Tyr Ile Val Leu Glu Leu Met
290 295 300

Glu Gly Gly Glu Leu Phe Asp Lys Val Val Gly Asn Lys Arg Leu Lys
305 310 315 320

Glu Ala Thr Cys Lys Leu Tyr Phe Tyr Gln Met Leu Leu Ala Val Gln
325 330 335

Tyr Leu His Glu Asn Gly Ile Ile His Arg Asp Leu Lys Pro Glu Asn
 340 345 350

Val Leu Leu Ser Ser Gln Glu Glu Asp Cys Leu Ile Lys Ile Thr Asp
 355 360 365

Phe Gly His Ser Lys Ile Leu Gly Glu Thr Ser Leu Met Arg Thr Leu
 370 375 380

Cys Gly Thr Pro Thr Tyr Leu Ala Pro Glu Val Leu Val Ser Val Gly
 385 390 395 400

Thr Ala Gly Tyr Asn Arg Ala Val Asp Cys Trp Ser Leu Gly Val Ile
 405 410 415

Leu Phe Ile Cys Leu Ser Gly Tyr Pro Pro Phe Ser Glu His Arg Thr
 420 425 430

Gln Val Ser Leu Lys Asp Gln Ile Thr Ser Gly Lys Tyr Asn Phe Ile
 435 440 445

Pro Glu Val Trp Ala Glu Val Ser Glu Lys Ala Leu Asp Leu Val Lys
 450 455 460

Lys Leu Leu Val Val Asp Pro Lys Ala Arg Phe Thr Thr Glu Glu Ala
 465 470 475 480

Leu Arg His Pro Trp Leu Gln Asp Glu Asp Met Lys Arg Lys Phe Gln
 485 490 495

Asp Leu Leu Ser Glu Glu Asn Glu Ser Thr Ala Leu Pro Gln Val Leu
 500 505 510

Ala Gln Pro Ser Thr Ser Arg Lys Arg Pro Arg Glu Gly Glu Ala Glu
 515 520 525

Gly Ala Glu Thr Thr Lys Arg Pro Ala Val Cys Ala Ala Val Leu
 530 535 540

<210> 3
 <211> 514
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 <213> Human

<400> 3

Met Ser Arg Glu Ser Asp Val Glu Ala Gln Gln Ser His Gly Ser Ser

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Ala Cys Ser Gln Pro His Gly Ser Val Thr Gln Ser Gln Gly Ser Ser	20	25	30
Ser Gln Ser Gln Gly Ile Ser Ser Ser Ser Thr Ser Thr Met Pro Asn	35	40	45
Ser Ser Gln Ser Ser His Ser Ser Ser Gly Thr Leu Ser Ser Leu Glu	50	55	60
Thr Val Ser Thr Gln Glu Leu Tyr Ser Ile Pro Glu Asp Gln Glu Pro	65	70	75
Glu Asp Gln Glu Pro Glu Glu Pro Thr Pro Ala Pro Trp Ala Arg Leu	85	90	95
Trp Ala Leu Gln Asp Gly Phe Ala Asn Leu Glu Cys Val Asn Asp Asn	100	105	110
Tyr Trp Phe Gly Arg Asp Lys Ser Cys Glu Tyr Cys Phe Asp Glu Pro	115	120	125
Leu Leu Lys Arg Thr Asp Lys Tyr Arg Thr Tyr Ser Lys Lys His Phe	130	135	140
Arg Ile Phe Arg Glu Val Gly Pro Lys Asn Ser Tyr Ile Ala Tyr Ile	145	150	155
Glu Asp His Ser Gly Asn Gly Thr Phe Val Asn Thr Glu Leu Val Gly	165	170	175
Lys Gly Lys Arg Arg Pro Leu Asn Asn Asn Ser Glu Ile Ala Leu Ser	180	185	190
Leu Ser Arg Asn Lys Val Phe Val Phe Phe Asp Leu Thr Val Asp Asp	195	200	205
Gln Ser Val Tyr Pro Lys Ala Leu Arg Asp Glu Tyr Ile Met Ser Lys	210	215	220
Thr Leu Gly Ser Gly Ala Cys Gly Glu Val Lys Leu Ala Phe Glu Arg	225	230	235
Lys Thr Cys Lys Lys Val Ala Ile Lys Ile Ile Ser Lys Arg Lys Phe	245	250	255

Ala Ile Gly Ser Ala Arg Glu Ala Asp Pro Ala Leu Asn Val Glu Thr
260 265 270

Glu Ile Glu Ile Leu Lys Lys Leu Asn His Pro Cys Ile Ile Lys Ile
275 280 285

Lys Asn Phe Phe Asp Ala Glu Asp Tyr Tyr Ile Val Leu Glu Leu Met
290 295 300

Glu Gly Gly Glu Leu Phe Asp Lys Val Val Gly Asn Lys Arg Leu Lys
305 310 315 320

Glu Ala Thr Cys Lys Leu Tyr Phe Tyr Gln Met Leu Leu Ala Val Gln
325 330 335

Ile Thr Asp Phe Gly His Ser Lys Ile Leu Gly Glu Thr Ser Leu Met
340 345 350

Arg Thr Leu Cys Gly Thr Pro Thr Tyr Leu Ala Pro Glu Val Leu Val
355 360 365

Ser Val Gly Thr Ala Gly Tyr Asn Arg Ala Val Asp Cys Trp Ser Leu
370 375 380

Gly Val Ile Leu Phe Ile Cys Leu Ser Gly Tyr Pro Pro Phe Ser Glu
385 390 395 400

His Arg Thr Gln Val Ser Leu Lys Asp Gln Ile Thr Ser Gly Lys Tyr
405 410 415

Asn Phe Ile Pro Glu Val Trp Ala Glu Val Ser Glu Lys Ala Leu Asp
420 425 430

Leu Val Lys Lys Leu Leu Val Val Asp Pro Lys Ala Arg Phe Thr Thr
435 440 445

Glu Glu Ala Leu Arg His Pro Trp Leu Gln Asp Glu Asp Met Lys Arg
450 455 460

Lys Phe Gln Asp Leu Leu Ser Glu Glu Asn Glu Ser Thr Ala Leu Pro
465 470 475 480

Gln Val Leu Ala Gln Pro Ser Thr Ser Arg Lys Arg Pro Arg Glu Gly
485 490 495

Glu Ala Glu Gly Ala Glu Thr Thr Lys Arg Pro Ala Val Cys Ala Ala
500 505 510

Val Leu

<210> 4
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<400> 4

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Ser Leu Arg Asp Pro Ala Gly Ile Phe Glu Leu Val Glu Val Val Gly
20 25 30

Asn Gly Thr Tyr Gly Gln Val Tyr Lys Gly Arg His Val Lys Thr Val
35 40 45

Thr Ala Ala Ile Lys Val Met Asp Val Thr Glu Asp Glu Glu Glu Glu
50 55 60

Ile Thr Leu Glu Ile Asn Met Leu Lys Lys Tyr Ser His His Arg Asn
65 70 75 80

Ile Ala Thr Tyr Tyr Gly Ala Phe Ile Lys Lys Ser Pro Pro Gly His
85 90 95

Asp Asp Gln Leu Trp Leu Val Met Glu Phe Cys Gly Ala Gly Ser Ile
100 105 110

Thr Asp Leu Val Lys Asn Thr Lys Gly Asn Thr Leu Lys Glu Asp Trp
115 120 125

Ile Ala Tyr Ile Ser Arg Glu Ile Leu Arg Gly Leu Ala His Leu His
130 135 140

Ile His His Val Ile His Arg Asp Ile Lys Gly Gln Asn Val Leu Leu
145 150 155 160

Thr Glu Asn Ala Glu Val Lys Leu Val Asp Phe Gly Val Ser Ala Gln
165 170 175

Leu Asp Arg Thr Val Gly Arg Arg Asn Thr Phe Ile Gly Thr Pro Tyr

180	185	190
Trp Met Ala Pro Glu Val Ile Ala Cys Asp Glu Asn Pro Asp Ala Thr		
195	200	205
Tyr Asp Tyr Arg Ser Asp Leu Trp Ser Cys Gly Ile Thr Ala Ile Glu		
210	215	220
Met Ala Glu Gly Gly Pro Pro Leu Cys Asp Met His Pro Met Arg Ala		
225	230	235
Leu Phe Leu Ile Pro Arg Asn Pro Pro Pro Arg Leu Lys Ser Lys Lys		
	245	250
Trp Ser Lys Lys Phe Phe Ser Phe Ile Glu Gly Cys Leu Val Lys Asn		
	260	265
Tyr Met Gln Arg Pro Ser Thr Glu Gln Leu Leu Lys His Pro Phe Ile		
	275	280
Arg Asp Gln Pro Asn Glu Arg Gln Val Arg Ile Gln Leu Lys Asp His		
	290	295
Ile Asp Arg Thr Arg Lys Lys Arg Gly Glu Lys Asp Glu Thr Glu Tyr		
305	310	315
Glu Tyr Ser Gly Ser Glu Glu Glu Glu Glu Glu Val Pro Glu Gln Glu		
	325	330
Gly Glu Pro Ser Ser Ile Val Asn Val Pro Gly Glu Ser Thr Leu Arg		
	340	345
Arg Asp Phe Leu Arg Leu Gln Gln Glu Asn Lys Glu Arg Ser Glu Ala		
	355	360
Leu Arg Arg Gln Gln Leu Leu Gln Glu Gln Gln Leu Arg Glu Gln Glu		
	370	375
Glu Tyr Lys Arg Gln Leu Leu Ala Glu Arg Gln Lys Arg Ile Glu Gln		
385	390	395
Gln Lys Glu Gln Arg Arg Arg Leu Glu Glu Gln Gln Arg Arg Glu Arg		
	405	410
Glu Ala Arg Arg Gln Gln Glu Arg Glu Gln Arg Arg Arg Glu Gln Glu		
	420	425
		430

Glu Lys Arg Arg Leu Glu Glu Leu Glu Arg Arg Arg Lys Glu Glu Glu
435 440 445

Glu Arg Arg Arg Ala Glu Glu Glu Lys Arg Arg Val Glu Arg Glu Gln
450 455 460

Glu Tyr Ile Arg Arg Gln Leu Glu Glu Glu Gln Arg His Leu Glu Ile
465 470 475 480

Leu Gln Gln Gln Leu Leu Gln Glu Gln Ala Met Leu Leu His Asp His
485 490 495

Arg Arg Pro His Ala Gln Gln Gln Pro Pro Pro Pro Gln Gln Gln Asp
500 505 510

Arg Ser Lys Pro Ser Phe His Ala Pro Glu Pro Lys Pro His Tyr Asp
515 520 525

Pro Ala Asp Arg Ala Arg Glu Val Gln Trp Ser His Leu Ala Ser Leu
530 535 540

Lys Asn Asn Val Ser Pro Val Ser Arg Ser His Ser Phe Ser Asp Pro
545 550 555 560

Ser Pro Lys Phe Ala His His His Leu Arg Ser Gln Asp Pro Cys Pro
565 570 575

Pro Ser Arg Ser Glu Gly Leu Ser Gln Ser Ser Asp Ser Lys Ser Glu
580 585 590

Val Pro Glu Pro Thr Gln Lys Ala Trp Ser Arg Ser Asp Ser Asp Glu
595 600 605

Val Pro Pro Arg Val Pro Val Arg Thr Thr Ser Arg Ser Pro Val Leu
610 615 620

Ser Arg Arg Asp Ser Pro Leu Gln Gly Gly Gly Gln Gln Asn Ser Gln
625 630 635 640

Ala Gly Gln Arg Asn Ser Thr Ser Ser Ile Glu Pro Arg Leu Leu Trp
645 650 655

Glu Arg Val Glu Lys Leu Val Pro Arg Pro Gly Ser Gly Ser Ser Ser
660 665 670

Gly Ser Ser Asn Ser Gly Ser Gln Pro Gly Ser His Pro Gly Ser Gln
 675 680 685

Ser Gly Ser Gly Glu Arg Phe Arg Val Arg Ser Ser Ser Lys Ser Glu
 690 695 700

Gly Ser Pro Ser Pro Arg Gln Glu Ser Ala Ala Lys Lys Pro Asp Asp
 705 710 715 720

Lys Lys Glu Val Phe Arg Ser Leu Lys Pro Ala Gly Glu Val Asp Leu
 725 730 735

Thr Ala Leu Ala Lys Glu Leu Arg Ala Val Glu Asp Val Arg Pro Pro
 740 745 750

His Lys Val Thr Asp Tyr Ser Ser Ser Ser Glu Glu Ser Gly Thr Thr
 755 760 765

Asp Glu Glu Glu Glu Asp Val Glu Gln Glu Gly Ala Asp Asp Ser Thr
 770 775 780

Ser Gly Pro Glu Asp Thr Arg Ala Ala Ser Ser Pro Asn Leu Ser Asn
 785 790 795 800

Gly Glu Thr Glu Ser Val Lys Thr Met Ile Val His Asp Asp Val Glu
 805 810 815

Ser Glu Pro Ala Met Thr Pro Ser Lys Glu Gly Thr Leu Ile Val Arg
 820 825 830

Gln Thr Gln Ser Ala Ser Ser Thr Leu Gln Lys His Lys Ser Ser Ser
 835 840 845

Ser Phe Thr Pro Phe Ile Asp Pro Arg Leu Leu Gln Ile Ser Pro Ser
 850 855 860

Ser Gly Thr Thr Val Thr Ser Val Val Gly Phe Ser Cys Asp Gly Leu
 865 870 875 880

Arg Pro Glu Ala Ile Arg Gln Asp Pro Thr Arg Lys Gly Ser Val Val
 885 890 895

Asn Val Asn Pro Thr Asn Thr Arg Pro Gln Ser Asp Thr Pro Glu Ile
 900 905 910

Arg Lys Tyr Lys Lys Arg Phe Asn Ser Glu Ile Leu Cys Ala Ala Leu
 915 920 925

Trp Gly Val Asn Leu Leu Val Gly Thr Glu Ser Gly Leu Met Leu Leu
 930 935 940

Asp Arg Ser Gly Gln Gly Lys Val Tyr Pro Leu Ile Ser Arg Arg Arg
 945 950 955 960

Phe Gln Gln Met Asp Val Leu Glu Gly Leu Asn Val Leu Val Thr Ile
 965 970 975

Ser Gly Lys Lys Asp Lys Leu Arg Val Tyr Tyr Leu Ser Trp Leu Arg
 980 985 990

Asn Lys Ile Leu His Asn Asp Pro Glu Val Glu Lys Lys Gln Gly Trp
 995 1000 1005

Thr Thr Val Gly Asp Leu Glu Gly Cys Val His Tyr Lys Val Val
 1010 1015 1020

Lys Tyr Glu Arg Ile Lys Phe Leu Val Ile Ala Leu Lys Ser Ser
 1025 1030 1035

Val Glu Val Tyr Ala Trp Ala Pro Lys Pro Tyr His Lys Phe Met
 1040 1045 1050

Ala Phe Lys Ser Phe Gly Glu Leu Leu His Lys Pro Leu Leu Val
 1055 1060 1065

Asp Leu Thr Val Glu Glu Gly Gln Arg Leu Lys Val Ile Tyr Gly
 1070 1075 1080

Ser Cys Ala Gly Phe His Ala Val Asp Val Asp Ser Gly Ser Val
 1085 1090 1095

Tyr Asp Ile Tyr Leu Pro Thr His Ile Gln Cys Ser Ile Lys Pro
 1100 1105 1110

His Ala Ile Ile Ile Leu Pro Asn Thr Asp Gly Met Glu Leu Leu
 1115 1120 1125

Val Cys Tyr Glu Asp Glu Gly Val Tyr Val Asn Thr Tyr Gly Arg
 1130 1135 1140

Ile Thr Lys Asp Val Val Leu Gln Trp Gly Glu Met Pro Thr Ser

1145		1150		1155
Val Ala Tyr Ile Arg Ser Asn Gln Thr Met Gly Trp Gly Glu Lys				
1160		1165		1170
Ala Ile Glu Ile Arg Ser Val Glu Thr Gly His Leu Asp Gly Val				
1175		1180		1185
Phe Met His Lys Arg Ala Gln Arg Leu Lys Phe Leu Cys Gly Arg				
1190		1195		1200
Asn Asp Lys Val Phe Phe Ser Ser Val Arg Ser Gly Gly Ser Ser				
1205		1210		1215
Gln Val Tyr Phe Met Thr Leu Gly Arg Thr Ser Leu Leu Ser Trp				
1220		1225		1230
<210>	5			
<211>	1239			
<212>	PRT			
<213>	HUMAN			
<400>	5			
Met Ala Asn Asp Ser Pro Ala Lys Ser Leu Val Asp Ile Asp Leu Ser				
1	5		10	15
Ser Leu Arg Asp Pro Ala Gly Ile Phe Glu Leu Val Glu Val Val Gly				
	20		25	30
Asn Gly Thr Tyr Gly Gln Val Tyr Lys Gly Arg His Val Lys Thr Gly				
	35		40	45
Gln Leu Ala Ala Ile Lys Val Met Asp Val Thr Glu Asp Glu Glu Glu				
	50		55	60
Glu Ile Lys Leu Glu Ile Asn Met Leu Lys Lys Tyr Ser His His Arg				
65		70	75	80
Asn Ile Ala Thr Tyr Tyr Gly Ala Phe Ile Lys Lys Ser Pro Pro Gly				
	85		90	95
His Asp Asp Gln Leu Trp Leu Val Met Glu Phe Cys Gly Ala Gly Ser				
	100		105	110
Ile Thr Asp Leu Val Lys Asn Thr Lys Gly Asn Thr Leu Lys Glu Asp				
	115		120	125

Trp Ile Ala Tyr Ile Ser Arg Glu Ile Leu Arg Gly Leu Ala His Leu
 130 135 140

His Ile His His Val Ile His Arg Asp Ile Lys Gly Gln Asn Val Leu
 145 150 155 160

Leu Thr Glu Asn Ala Glu Val Lys Leu Val Asp Phe Gly Val Ser Ala
 165 170 175

Gln Leu Asp Arg Thr Val Gly Arg Arg Asn Thr Phe Ile Gly Thr Pro
 180 185 190

Tyr Trp Met Ala Pro Glu Val Ile Ala Cys Asp Glu Asn Pro Asp Ala
 195 200 205

Thr Tyr Asp Tyr Arg Ser Asp Leu Trp Ser Cys Gly Ile Thr Ala Ile
 210 215 220

Glu Met Ala Glu Gly Ala Pro Pro Leu Cys Asp Met His Pro Met Arg
 225 230 235 240

Ala Leu Phe Leu Ile Pro Arg Asn Pro Pro Pro Arg Leu Lys Ser Lys
 245 250 255

Lys Trp Ser Lys Lys Phe Phe Ser Phe Ile Glu Gly Cys Leu Val Lys
 260 265 270

Asn Tyr Met Gln Arg Pro Ser Thr Glu Gln Leu Leu Lys His Pro Phe
 275 280 285

Ile Arg Asp Gln Pro Asn Glu Arg Gln Val Arg Ile Gln Leu Lys Asp
 290 295 300

His Ile Asp Arg Thr Arg Lys Lys Arg Gly Glu Lys Asp Glu Thr Glu
 305 310 315 320

Tyr Glu Tyr Ser Gly Ser Glu Glu Glu Glu Glu Glu Val Pro Glu Gln
 325 330 335

Glu Gly Glu Pro Ser Ser Ile Val Asn Val Pro Gly Glu Ser Thr Leu
 340 345 350

Arg Arg Asp Phe Leu Arg Leu Gln Gln Glu Asn Lys Glu Arg Ser Glu
 355 360 365

Ala Leu Arg Arg Gln Gln Leu Leu Gln Glu Gln Gln Leu Arg Glu Gln
 370 375 380

Glu Glu Tyr Lys Arg Gln Leu Leu Ala Glu Arg Gln Lys Arg Ile Glu
 385 390 395 400

Gln Gln Lys Glu Gln Arg Arg Arg Leu Glu Glu Gln Gln Arg Arg Glu
 405 410 415

Arg Glu Ala Arg Arg Gln Gln Glu Arg Glu Gln Arg Arg Arg Glu Gln
 420 425 430

Glu Glu Lys Arg Arg Leu Glu Glu Leu Glu Arg Arg Arg Lys Glu Glu
 435 440 445

Glu Glu Arg Arg Arg Ala Glu Glu Glu Lys Arg Arg Val Glu Arg Glu
 450 455 460

Gln Glu Tyr Ile Arg Arg Gln Leu Glu Glu Glu Gln Arg His Leu Glu
 465 470 475 480

Val Leu Gln Gln Gln Leu Leu Gln Glu Gln Ala Met Leu Leu Glu Cys
 485 490 495

Arg Trp Arg Glu Met Glu Glu His Arg Gln Ala Glu Arg Leu Gln Arg
 500 505 510

Gln Leu Gln Gln Glu Gln Ala Tyr Leu Leu Ser Leu Gln His Asp His
 515 520 525

Arg Arg Pro His Pro Gln His Ser Gln Gln Pro Pro Pro Pro Gln Gln
 530 535 540

Glu Arg Ser Lys Pro Ser Phe His Ala Pro Glu Pro Lys Ala His Tyr
 545 550 555 560

Glu Pro Ala Asp Arg Ala Arg Glu Val Glu Asp Arg Phe Arg Lys Thr
 565 570 575

Asn His Ser Ser Pro Glu Ala Gln Ser Lys Gln Thr Gly Arg Val Leu
 580 585 590

Glu Pro Pro Val Pro Ser Arg Ser Glu Ser Phe Ser Asn Gly Asn Ser
 595 600 605

Glu Ser Val His Pro Ala Leu Gln Arg Pro Ala Glu Pro Gln Val Pro

610	615	620
Val Arg Thr Thr Ser Arg Ser Pro Val Leu Ser Arg Arg Asp Ser Pro		
625	630	635 640
Leu Gln Gly Ser Gly Gln Gln Asn Ser Gln Ala Gly Gln Arg Asn Ser		
	645	650 655
Thr Ser Ile Glu Pro Arg Leu Leu Trp Glu Arg Val Glu Lys Leu Val		
	660	665 670
Pro Arg Pro Gly Ser Gly Ser Ser Ser Gly Ser Ser Asn Ser Gly Ser		
	675	680 685
Gln Pro Gly Ser His Pro Gly Ser Gln Ser Gly Ser Gly Glu Arg Phe		
	690	695 700
Arg Val Arg Ser Ser Ser Lys Ser Glu Gly Ser Pro Ser Gln Arg Leu		
	705	710 715 720
Glu Asn Ala Val Lys Lys Pro Glu Asp Lys Lys Glu Val Phe Arg Pro		
	725	730 735
Leu Lys Pro Ala Asp Leu Thr Ala Leu Ala Lys Glu Leu Arg Ala Val		
	740	745 750
Glu Asp Val Arg Pro Pro His Lys Val Thr Asp Tyr Ser Ser Ser Ser		
	755	760 765
Glu Glu Ser Gly Thr Thr Asp Glu Glu Asp Asp Asp Val Glu Gln Glu		
	770	775 780
Gly Ala Asp Glu Ser Thr Ser Gly Pro Glu Asp Thr Arg Ala Ala Ser		
	785	790 795 800
Ser Leu Asn Leu Ser Asn Gly Glu Thr Glu Ser Val Lys Thr Met Ile		
	805	810 815
Val His Asp Asp Val Glu Ser Glu Pro Ala Met Thr Pro Ser Lys Glu		
	820	825 830
Gly Thr Leu Ile Val Arg Gln Thr Gln Ser Ala Ser Ser Thr Leu Gln		
	835	840 845
Lys His Lys Ser Ser Ser Ser Phe Thr Pro Phe Ile Asp Pro Arg Leu		
	850	855 860

Leu Gln Ile Ser Pro Ser Ser Gly Thr Thr Val Thr Ser Val Val Gly
 865 870 875 880

Phe Ser Cys Asp Gly Met Arg Pro Glu Ala Ile Arg Gln Asp Pro Thr
 885 890 895

Arg Lys Gly Ser Val Val Asn Val Asn Pro Thr Asn Thr Arg Pro Gln
 900 905 910

Ser Asp Thr Pro Glu Ile Arg Lys Tyr Lys Lys Arg Phe Asn Ser Glu
 915 920 925

Ile Leu Cys Ala Ala Leu Trp Gly Val Asn Leu Leu Val Gly Thr Glu
 930 935 940

Ser Gly Leu Met Leu Leu Asp Arg Ser Gly Gln Gly Lys Val Tyr Pro
 945 950 955 960

Leu Ile Asn Arg Arg Arg Phe Gln Gln Met Asp Val Leu Glu Gly Leu
 965 970 975

Asn Val Leu Val Thr Ile Ser Gly Lys Lys Asp Lys Leu Arg Val Tyr
 980 985 990

Tyr Leu Ser Trp Leu Arg Asn Lys Ile Leu His Asn Asp Pro Glu Val
 995 1000 1005

Glu Lys Lys Gln Gly Trp Thr Thr Val Gly Asp Leu Glu Gly Cys
 1010 1015 1020

Val His Tyr Lys Val Val Lys Tyr Glu Arg Ile Lys Phe Leu Val
 1025 1030 1035

Ile Ala Leu Lys Ser Ser Val Glu Val Tyr Ala Trp Ala Pro Lys
 1040 1045 1050

Pro Tyr His Lys Phe Met Ala Phe Lys Ser Phe Gly Glu Leu Val
 1055 1060 1065

His Lys Pro Leu Leu Val Asp Leu Thr Val Glu Glu Gly Gln Arg
 1070 1075 1080

Leu Lys Val Ile Tyr Gly Ser Cys Ala Gly Phe His Ala Val Asp
 1085 1090 1095

Val Asp Ser Gly Ser Val Tyr Asp Ile Tyr Leu Pro Thr His Ile
1100 1105 1110

Gln Cys Ser Ile Lys Pro His Ala Ile Ile Ile Leu Pro Asn Thr
1115 1120 1125

Asp Gly Met Glu Leu Leu Val Cys Tyr Glu Asp Glu Gly Val Tyr
1130 1135 1140

Val Asn Thr Tyr Gly Arg Ile Thr Lys Asp Val Val Leu Gln Trp
1145 1150 1155

Gly Glu Met Pro Thr Ser Val Ala Tyr Ile Arg Ser Asn Gln Thr
1160 1165 1170

Met Gly Trp Gly Glu Lys Ala Ile Glu Ile Arg Ser Val Glu Thr
1175 1180 1185

Gly His Leu Asp Gly Val Phe Met His Lys Arg Ala Gln Arg Leu
1190 1195 1200

Lys Phe Leu Cys Glu Arg Asn Asp Lys Val Phe Phe Ala Ser Val
1205 1210 1215

Arg Ser Gly Gly Ser Ser Gln Val Tyr Phe Met Thr Leu Gly Arg
1220 1225 1230

Thr Ser Leu Leu Ser Trp
1235

<210> 6
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<212> PRT
<213> HUMAN

<400> 6

Met Ala Asn Asp Ser Pro Ala Lys Ser Leu Val Asp Ile Asp Leu Ser
1 5 10 15

Ser Leu Arg Asp Pro Ala Gly Ile Phe Glu Leu Val Glu Val Val Gly
20 25 30

Asn Gly Thr Tyr Gly Gln Val Tyr Lys Gly Arg His Val Lys Thr Gly
35 40 45

Gln Leu Ala Ala Ile Lys Val Met Asp Val Thr Glu Asp Glu Glu Glu

50		55		60	
Glu Ile Lys Leu Glu Ile Asn Met Leu Lys Lys Tyr Ser His His Arg					
65		70		75	80
Asn Ile Ala Thr Tyr Tyr Gly Ala Phe Ile Lys Lys Ser Pro Pro Gly					
	85		90		95
His Asp Asp Gln Leu Trp Leu Val Met Glu Phe Cys Gly Ala Gly Ser					
	100		105		110
Ile Thr Asp Leu Val Lys Asn Thr Lys Gly Asn Thr Leu Lys Glu Asp					
	115		120		125
Trp Ile Ala Tyr Ile Ser Arg Glu Ile Leu Arg Gly Leu Ala His Leu					
	130		135		140
His Ile His His Val Ile His Arg Asp Ile Lys Gly Gln Asn Val Leu					
145		150		155	160
Leu Thr Glu Asn Ala Glu Val Lys Leu Val Asp Phe Gly Val Ser Ala					
	165		170		175
Gln Leu Asp Arg Thr Val Gly Arg Arg Asn Thr Phe Ile Gly Thr Pro					
	180		185		190
Tyr Trp Met Ala Pro Glu Val Ile Ala Cys Asp Glu Asn Pro Asp Ala					
	195		200		205
Thr Tyr Asp Tyr Arg Ser Asp Leu Trp Ser Cys Gly Ile Thr Ala Ile					
	210		215		220
Glu Met Ala Glu Gly Ala Pro Pro Leu Cys Asp Met His Pro Met Arg					
225		230		235	240
Ala Leu Phe Leu Ile Pro Arg Asn Pro Pro Pro Arg Leu Lys Ser Lys					
	245		250		255
Lys Trp Ser Lys Lys Phe Phe Ser Phe Ile Glu Gly Cys Leu Val Lys					
	260		265		270
Asn Tyr Met Gln Arg Pro Ser Thr Glu Gln Leu Leu Lys His Pro Phe					
	275		280		285
Ile Arg Asp Gln Pro Asn Glu Arg Gln Val Arg Ile Gln Leu Lys Asp					
	290		295		300

His Ile Asp Arg Thr Arg Lys Lys Arg Gly Glu Lys Asp Glu Thr Glu
 305 310 315 320

Tyr Glu Tyr Ser Gly Ser Glu Glu Glu Glu Glu Glu Val Pro Glu Gln
 325 330 335

Glu Gly Glu Pro Ser Ser Ile Val Asn Val Pro Gly Glu Ser Thr Leu
 340 345 350

Arg Arg Asp Phe Leu Arg Leu Gln Gln Glu Asn Lys Glu Arg Ser Glu
 355 360 365

Ala Leu Arg Arg Gln Gln Leu Leu Gln Glu Gln Gln Leu Arg Glu Gln
 370 375 380

Glu Glu Tyr Lys Arg Gln Leu Leu Ala Glu Arg Gln Lys Arg Ile Glu
 385 390 395 400

Gln Gln Lys Glu Gln Arg Arg Arg Leu Glu Glu Gln Gln Arg Arg Glu
 405 410 415

Arg Glu Ala Arg Arg Gln Gln Glu Arg Glu Gln Arg Arg Arg Glu Gln
 420 425 430

Glu Glu Lys Arg Arg Leu Glu Glu Leu Glu Arg Arg Arg Lys Glu Glu
 435 440 445

Glu Glu Arg Arg Arg Ala Glu Glu Glu Lys Arg Arg Val Glu Arg Glu
 450 455 460

Gln Glu Tyr Ile Arg Arg Gln Leu Glu Glu Glu Gln Arg His Leu Glu
 465 470 475 480

Val Leu Gln Gln Gln Leu Leu Gln Glu Gln Ala Met Leu Leu His Asp
 485 490 495

His Arg Arg Pro His Pro Gln His Ser Gln Gln Pro Pro Pro Pro Gln
 500 505 510

Gln Glu Arg Ser Lys Pro Ser Phe His Ala Pro Glu Pro Lys Ala His
 515 520 525

Tyr Glu Pro Ala Asp Arg Ala Arg Glu Val Glu Asp Arg Phe Arg Lys
 530 535 540

Thr Asn His Ser Ser Pro Glu Ala Gln Ser Lys Gln Thr Gly Arg Val
 545 550 555 560

Leu Glu Pro Pro Val Pro Ser Arg Ser Glu Ser Phe Ser Asn Gly Asn
 565 570 575

Ser Glu Ser Val His Pro Ala Leu Gln Arg Pro Ala Glu Pro Gln Val
 580 585 590

Pro Val Arg Thr Thr Ser Arg Ser Pro Val Leu Ser Arg Arg Asp Ser
 595 600 605

Pro Leu Gln Gly Ser Gly Gln Gln Asn Ser Gln Ala Gly Gln Arg Asn
 610 615 620

Ser Thr Ser Ser Ile Glu Pro Arg Leu Leu Trp Glu Arg Val Glu Lys
 625 630 635 640

Leu Val Pro Arg Pro Gly Ser Gly Ser Ser Ser Gly Ser Ser Asn Ser
 645 650 655

Gly Ser Gln Pro Gly Ser His Pro Gly Ser Gln Ser Gly Ser Gly Glu
 660 665 670

Arg Phe Arg Val Arg Ser Ser Ser Lys Ser Glu Gly Ser Pro Ser Gln
 675 680 685

Arg Leu Glu Asn Ala Val Lys Lys Pro Glu Asp Lys Lys Glu Val Phe
 690 695 700

Arg Pro Leu Lys Pro Ala Gly Glu Val Asp Leu Thr Ala Leu Ala Lys
 705 710 715 720

Glu Leu Arg Ala Val Glu Asp Val Arg Pro Pro His Lys Val Thr Asp
 725 730 735

Tyr Ser Ser Ser Ser Glu Glu Ser Gly Thr Thr Asp Glu Glu Asp Asp
 740 745 750

Asp Val Glu Gln Glu Gly Ala Asp Glu Ser Thr Ser Gly Pro Glu Asp
 755 760 765

Thr Arg Ala Ala Ser Ser Leu Asn Leu Ser Asn Gly Glu Thr Glu Ser
 770 775 780

Val Lys Thr Met Ile Val His Asp Asp Val Glu Ser Glu Pro Ala Met
785 790 795 800

Thr Pro Ser Lys Glu Gly Thr Leu Ile Val Arg Gln Thr Gln Ser Ala
805 810 815

Ser Ser Thr Leu Gln Lys His Lys Ser Ser Ser Ser Phe Thr Pro Phe
820 825 830

Ile Asp Pro Arg Leu Leu Gln Ile Ser Pro Ser Ser Gly Thr Thr Val
835 840 845

Thr Ser Val Val Gly Phe Ser Cys Asp Gly Met Arg Pro Glu Ala Ile
850 855 860

Arg Gln Asp Pro Thr Arg Lys Gly Ser Val Val Asn Val Asn Pro Thr
865 870 875 880

Asn Thr Arg Pro Gln Ser Asp Thr Pro Glu Ile Arg Lys Tyr Lys Lys
885 890 895

Arg Phe Asn Ser Glu Ile Leu Cys Ala Ala Leu Trp Gly Val Asn Leu
900 905 910

Leu Val Gly Thr Glu Ser Gly Leu Met Leu Leu Asp Arg Ser Gly Gln
915 920 925

Gly Lys Val Tyr Pro Leu Ile Asn Arg Arg Arg Phe Gln Gln Met Asp
930 935 940

Val Leu Glu Gly Leu Asn Val Leu Val Thr Ile Ser Gly Lys Lys Asp
945 950 955 960

Lys Leu Arg Val Tyr Tyr Leu Ser Trp Leu Arg Asn Lys Ile Leu His
965 970 975

Asn Asp Pro Glu Val Glu Lys Lys Gln Gly Trp Thr Thr Val Gly Asp
980 985 990

Leu Glu Gly Cys Val His Tyr Lys Val Val Lys Tyr Glu Arg Ile Lys
995 1000 1005

Phe Leu Val Ile Ala Leu Lys Ser Ser Val Glu Val Tyr Ala Trp
1010 1015 1020

Ala Pro Lys Pro Tyr His Lys Phe Met Ala Phe Lys Ser Phe Gly

1025		1030		1035
Glu Leu Val His Lys Pro Leu	Leu Val Asp Leu Thr	Val Glu Glu		
1040	1045	1050		
Gly Gln Arg Leu Lys Val Ile	Tyr Gly Ser Cys Ala	Gly Phe His		
1055	1060	1065		
Ala Val Asp Val Asp Ser Gly	Ser Val Tyr Asp Ile	Tyr Leu Pro		
1070	1075	1080		
Thr His Ile Gln Cys Ser Ile	Lys Pro His Ala Ile	Ile Ile Leu		
1085	1090	1095		
Pro Asn Thr Asp Gly Met Glu	Leu Leu Val Cys Tyr	Glu Asp Glu		
1100	1105	1110		
Gly Val Tyr Val Asn Thr Tyr	Gly Arg Ile Thr Lys	Asp Val Val		
1115	1120	1125		
Leu Gln Trp Gly Glu Met Pro	Thr Ser Val Ala Tyr	Ile Arg Ser		
1130	1135	1140		
Asn Gln Thr Met Gly Trp Gly	Glu Lys Ala Ile Glu	Ile Arg Ser		
1145	1150	1155		
Val Glu Thr Gly His Leu Asp	Gly Val Phe Met His	Lys Arg Ala		
1160	1165	1170		
Gln Arg Leu Lys Phe Leu Cys	Glu Arg Asn Asp Lys	Val Phe Phe		
1175	1180	1185		
Ala Ser Val Arg Ser Gly Gly	Ser Ser Gln Val Tyr	Phe Met Thr		
1190	1195	1200		
Leu Gly Arg Thr Ser Leu Leu	Ser Trp			
1205	1210			

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<400> 7

Met	Ala	Asn	Asp	Ser	Pro	Ala	Lys	Ser	Leu	Val	Asp	Ile	Asp	Leu	Ser
1				5					10					15	

Ser Leu Arg Asp Pro Ala Gly Ile Phe Glu Leu Val Glu Val Val Gly
 20 25 30

Asn Gly Thr Tyr Gly Gln Val Tyr Lys Gly Arg His Val Lys Thr Gly
 35 40 45

Gln Leu Ala Ala Ile Lys Val Met Asp Val Thr Glu Asp Glu Glu Glu
 50 55 60

Glu Ile Lys Leu Glu Ile Asn Met Leu Lys Lys Tyr Ser His His Arg
 65 70 75 80

Asn Ile Ala Thr Tyr Tyr Gly Ala Phe Ile Lys Lys Ser Pro Pro Gly
 85 90 95

His Asp Asp Gln Leu Trp Leu Val Met Glu Phe Cys Gly Ala Gly Ser
 100 105 110

Ile Thr Asp Leu Val Lys Asn Thr Lys Gly Asn Thr Leu Lys Glu Asp
 115 120 125

Trp Ile Ala Tyr Ile Ser Arg Glu Ile Leu Arg Gly Leu Ala His Leu
 130 135 140

His Ile His His Val Ile His Arg Asp Ile Lys Gly Gln Asn Val Leu
 145 150 155 160

Leu Thr Glu Asn Ala Glu Val Lys Leu Val Asp Phe Gly Val Ser Ala
 165 170 175

Gln Leu Asp Arg Thr Val Gly Arg Arg Asn Thr Phe Ile Gly Thr Pro
 180 185 190

Tyr Trp Met Ala Pro Glu Val Ile Ala Cys Asp Glu Asn Pro Asp Ala
 195 200 205

Thr Tyr Asp Tyr Arg Ser Asp Leu Trp Ser Cys Gly Ile Thr Ala Ile
 210 215 220

Glu Met Ala Glu Gly Ala Pro Pro Leu Cys Asp Met His Pro Met Arg
 225 230 235 240

Ala Leu Phe Leu Ile Pro Arg Asn Pro Pro Pro Arg Leu Lys Ser Lys
 245 250 255

Lys Trp Ser Lys Lys Phe Phe Ser Phe Ile Glu Gly Cys Leu Val Lys
260 265 270

Asn Tyr Met Gln Arg Pro Ser Thr Glu Gln Leu Leu Lys His Pro Phe
275 280 285

Ile Arg Asp Gln Pro Asn Glu Arg Gln Val Arg Ile Gln Leu Lys Asp
290 295 300

His Ile Asp Arg Thr Arg Lys Lys Arg Gly Glu Lys Asp Glu Thr Glu
305 310 315 320

Tyr Glu Tyr Ser Gly Ser Glu Glu Glu Glu Glu Glu Val Pro Glu Gln
325 330 335

Glu Gly Glu Pro Ser Ser Ile Val Asn Val Pro Gly Glu Ser Thr Leu
340 345 350

Arg Arg Asp Phe Leu Arg Leu Gln Gln Glu Asn Lys Glu Arg Ser Glu
355 360 365

Ala Leu Arg Arg Gln Gln Leu Leu Gln Glu Gln Gln Leu Arg Glu Gln
370 375 380

Glu Glu Tyr Lys Arg Gln Leu Leu Ala Glu Arg Gln Lys Arg Ile Glu
385 390 395 400

Gln Gln Lys Glu Gln Arg Arg Arg Leu Glu Glu Gln Gln Arg Arg Glu
405 410 415

Arg Glu Ala Arg Arg Gln Gln Glu Arg Glu Gln Arg Arg Arg Glu Gln
420 425 430

Glu Glu Lys Arg Arg Leu Glu Glu Leu Glu Arg Arg Arg Lys Glu Glu
435 440 445

Glu Glu Arg Arg Arg Ala Glu Glu Glu Lys Arg Arg Val Glu Arg Glu
450 455 460

Gln Glu Tyr Ile Arg Arg Gln Leu Glu Glu Glu Gln Arg His Leu Glu
465 470 475 480

Val Leu Gln Gln Gln Leu Leu Gln Glu Gln Ala Met Leu Leu Glu Cys
485 490 495

Arg Trp Arg Glu Met Glu Glu His Arg Gln Ala Glu Arg Leu Gln Arg

500					505					510					
Gln	Leu	Gln	Gln	Glu	Gln	Ala	Tyr	Leu	Leu	Ser	Leu	Gln	His	Asp	His
	515						520					525			
Arg	Arg	Pro	His	Pro	Gln	His	Ser	Gln	Gln	Pro	Pro	Pro	Pro	Gln	Gln
	530					535					540				
Glu	Arg	Ser	Lys	Pro	Ser	Phe	His	Ala	Pro	Glu	Pro	Lys	Ala	His	Tyr
545					550					555					560
Glu	Pro	Ala	Asp	Arg	Ala	Arg	Glu	Val	Glu	Asp	Arg	Phe	Arg	Lys	Thr
				565					570					575	
Asn	His	Ser	Ser	Pro	Glu	Ala	Gln	Ser	Lys	Gln	Thr	Gly	Arg	Val	Leu
			580					585					590		
Glu	Pro	Pro	Val	Pro	Ser	Arg	Ser	Glu	Ser	Phe	Ser	Asn	Gly	Asn	Ser
		595					600					605			
Glu	Ser	Val	His	Pro	Ala	Leu	Gln	Arg	Pro	Ala	Glu	Pro	Gln	Val	Gln
610						615					620				
Trp	Ser	His	Leu	Ala	Ser	Leu	Lys	Asn	Asn	Val	Ser	Pro	Val	Ser	Arg
625					630					635					640
Ser	His	Ser	Phe	Ser	Asp	Pro	Ser	Pro	Lys	Phe	Ala	His	His	His	Leu
				645					650					655	
Arg	Ser	Gln	Asp	Pro	Cys	Pro	Pro	Ser	Arg	Ser	Glu	Val	Leu	Ser	Gln
			660					665					670		
Ser	Ser	Asp	Ser	Lys	Ser	Glu	Ala	Pro	Asp	Pro	Thr	Gln	Lys	Ala	Trp
		675					680					685			
Ser	Arg	Ser	Asp	Ser	Asp	Glu	Val	Pro	Pro	Arg	Val	Pro	Val	Arg	Thr
	690					695					700				
Thr	Ser	Arg	Ser	Pro	Val	Leu	Ser	Arg	Arg	Asp	Ser	Pro	Leu	Gln	Gly
705					710					715					720
Ser	Gly	Gln	Gln	Asn	Ser	Gln	Ala	Gly	Gln	Arg	Asn	Ser	Thr	Ser	Ser
				725					730					735	
Ile	Glu	Pro	Arg	Leu	Leu	Trp	Glu	Arg	Val	Glu	Lys	Leu	Val	Pro	Arg
			740					745					750		

Pro Gly Ser Gly Ser Ser Ser Gly Ser Ser Asn Ser Gly Ser Gln Pro
755 760 765

Gly Ser His Pro Gly Ser Gln Ser Gly Ser Gly Glu Arg Phe Arg Val
770 775 780

Arg Ser Ser Ser Lys Ser Glu Gly Ser Pro Ser Gln Arg Leu Glu Asn
785 790 795 800

Ala Val Lys Lys Pro Glu Asp Lys Lys Glu Val Phe Arg Pro Leu Lys
805 810 815

Pro Ala Gly Glu Val Asp Leu Thr Ala Leu Ala Lys Glu Leu Arg Ala
820 825 830

Val Glu Asp Val Arg Pro Pro His Lys Val Thr Asp Tyr Ser Ser Ser
835 840 845

Ser Glu Glu Ser Gly Thr Thr Asp Glu Glu Asp Asp Asp Val Glu Gln
850 855 860

Glu Gly Ala Asp Glu Ser Thr Ser Gly Pro Glu Asp Thr Arg Ala Ala
865 870 875 880

Ser Ser Leu Asn Leu Ser Asn Gly Glu Thr Glu Ser Val Lys Thr Met
885 890 895

Ile Val His Asp Asp Val Glu Ser Glu Pro Ala Met Thr Pro Ser Lys
900 905 910

Glu Gly Thr Leu Ile Val Arg Gln Thr Gln Ser Ala Ser Ser Thr Leu
915 920 925

Gln Lys His Lys Ser Ser Ser Ser Phe Thr Pro Phe Ile Asp Pro Arg
930 935 940

Leu Leu Gln Ile Ser Pro Ser Ser Gly Thr Thr Val Thr Ser Val Val
945 950 955 960

Gly Phe Ser Cys Asp Gly Met Arg Pro Glu Ala Ile Arg Gln Asp Pro
965 970 975

Thr Arg Lys Gly Ser Val Val Asn Val Asn Pro Thr Asn Thr Arg Pro
980 985 990

Gln Ser Asp Thr Pro Glu Ile Arg Lys Tyr Lys Lys Arg Phe Asn Ser
 995 1000 1005

Glu Ile Leu Cys Ala Ala Leu Trp Gly Val Asn Leu Leu Val Gly
 1010 1015 1020

Thr Glu Ser Gly Leu Met Leu Leu Asp Arg Ser Gly Gln Gly Lys
 1025 1030 1035

Val Tyr Pro Leu Ile Asn Arg Arg Arg Phe Gln Gln Met Asp Val
 1040 1045 1050

Leu Glu Gly Leu Asn Val Leu Val Thr Ile Ser Gly Lys Lys Asp
 1055 1060 1065

Lys Leu Arg Val Tyr Tyr Leu Ser Trp Leu Arg Asn Lys Ile Leu
 1070 1075 1080

His Asn Asp Pro Glu Val Glu Lys Lys Gln Gly Trp Thr Thr Val
 1085 1090 1095

Gly Asp Leu Glu Gly Cys Val His Tyr Lys Val Val Lys Tyr Glu
 1100 1105 1110

Arg Ile Lys Phe Leu Val Ile Ala Leu Lys Ser Ser Val Glu Val
 1115 1120 1125

Tyr Ala Trp Ala Pro Lys Pro Tyr His Lys Phe Met Ala Phe Lys
 1130 1135 1140

Ser Phe Gly Glu Leu Val His Lys Pro Leu Leu Val Asp Leu Thr
 1145 1150 1155

Val Glu Glu Gly Gln Arg Leu Lys Val Ile Tyr Gly Ser Cys Ala
 1160 1165 1170

Gly Phe His Ala Val Asp Val Asp Ser Gly Ser Val Tyr Asp Ile
 1175 1180 1185

Tyr Leu Pro Thr His Ile Gln Cys Ser Ile Lys Pro His Ala Ile
 1190 1195 1200

Ile Ile Leu Pro Asn Thr Asp Gly Met Glu Leu Leu Val Cys Tyr
 1205 1210 1215

Glu Asp Glu Gly Val Tyr Val Asn Thr Tyr Gly Arg Ile Thr Lys
 1220 1225 1230

Asp Val Val Leu Gln Trp Gly Glu Met Pro Thr Ser Val Ala Tyr
 1235 1240 1245

Ile Arg Ser Asn Gln Thr Met Gly Trp Gly Glu Lys Ala Ile Glu
 1250 1255 1260

Ile Arg Ser Val Glu Thr Gly His Leu Asp Gly Val Phe Met His
 1265 1270 1275

Lys Arg Ala Gln Arg Leu Lys Phe Leu Cys Glu Arg Asn Asp Lys
 1280 1285 1290

Val Phe Phe Ala Ser Val Arg Ser Gly Gly Ser Ser Gln Val Tyr
 1295 1300 1305

Phe Met Thr Leu Gly Arg Thr Ser Leu Leu Ser Trp
 1310 1315 1320

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<400> 8

Met Ala Asn Asp Ser Pro Ala Lys Ser Leu Val Asp Ile Asp Leu Ser
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Ser Leu Arg Asp Pro Ala Gly Ile Phe Glu Leu Val Glu Val Val Gly
 20 25 30

Asn Gly Thr Tyr Gly Gln Val Tyr Lys Gly Arg His Val Lys Thr Gly
 35 40 45

Gln Leu Ala Ala Ile Lys Val Met Asp Val Thr Glu Asp Glu Glu Glu
 50 55 60

Glu Ile Lys Leu Glu Ile Asn Met Leu Lys Lys Tyr Ser His His Arg
 65 70 75 80

Asn Ile Ala Thr Tyr Tyr Gly Ala Phe Ile Lys Lys Ser Pro Pro Gly
 85 90 95

His Asp Asp Gln Leu Trp Leu Val Met Glu Phe Cys Gly Ala Gly Ser
 100 105 110

Ile Thr Asp Leu Val Lys Asn Thr Lys Gly Asn Thr Leu Lys Glu Asp
115 120 125

Trp Ile Ala Tyr Ile Ser Arg Glu Ile Leu Arg Gly Leu Ala His Leu
130 135 140

His Ile His His Val Ile His Arg Asp Ile Lys Gly Gln Asn Val Leu
145 150 155 160

Leu Thr Glu Asn Ala Glu Val Lys Leu Val Asp Phe Gly Val Ser Ala
165 170 175

Gln Leu Asp Arg Thr Val Gly Arg Arg Asn Thr Phe Ile Gly Thr Pro
180 185 190

Tyr Trp Met Ala Pro Glu Val Ile Ala Cys Asp Glu Asn Pro Asp Ala
195 200 205

Thr Tyr Asp Tyr Arg Ser Asp Leu Trp Ser Cys Gly Ile Thr Ala Ile
210 215 220

Glu Met Ala Glu Gly Ala Pro Pro Leu Cys Asp Met His Pro Met Arg
225 230 235 240

Ala Leu Phe Leu Ile Pro Arg Asn Pro Pro Pro Arg Leu Lys Ser Lys
245 250 255

Lys Trp Ser Lys Lys Phe Phe Ser Phe Ile Glu Gly Cys Leu Val Lys
260 265 270

Asn Tyr Met Gln Arg Pro Ser Thr Glu Gln Leu Leu Lys His Pro Phe
275 280 285

Ile Arg Asp Gln Pro Asn Glu Arg Gln Val Arg Ile Gln Leu Lys Asp
290 295 300

His Ile Asp Arg Thr Arg Lys Lys Arg Gly Glu Lys Asp Glu Thr Glu
305 310 315 320

Tyr Glu Tyr Ser Gly Ser Glu Glu Glu Glu Glu Glu Val Pro Glu Gln
325 330 335

Glu Gly Glu Pro Ser Ser Ile Val Asn Val Pro Gly Glu Ser Thr Leu
340 345 350

Arg Arg Asp Phe Leu Arg Leu Gln Gln Glu Asn Lys Glu Arg Ser Glu
 355 360 365

Ala Leu Arg Arg Gln Gln Leu Leu Gln Glu Gln Gln Leu Arg Glu Gln
 370 375 380

Glu Glu Tyr Lys Arg Gln Leu Leu Ala Glu Arg Gln Lys Arg Ile Glu
 385 390 395 400

Gln Gln Lys Glu Gln Arg Arg Arg Leu Glu Glu Gln Gln Arg Arg Glu
 405 410 415

Arg Glu Ala Arg Arg Gln Gln Glu Arg Glu Gln Arg Arg Arg Glu Gln
 420 425 430

Glu Glu Lys Arg Arg Leu Glu Glu Leu Glu Arg Arg Arg Lys Glu Glu
 435 440 445

Glu Glu Arg Arg Arg Ala Glu Glu Glu Lys Arg Arg Val Glu Arg Glu
 450 455 460

Gln Glu Tyr Ile Arg Arg Gln Leu Glu Glu Glu Gln Arg His Leu Glu
 465 470 475 480

Val Leu Gln Gln Gln Leu Leu Gln Glu Gln Ala Met Leu Leu His Asp
 485 490 495

His Arg Arg Pro His Pro Gln His Ser Gln Gln Pro Pro Pro Pro Gln
 500 505 510

Gln Glu Arg Ser Lys Pro Ser Phe His Ala Pro Glu Pro Lys Ala His
 515 520 525

Tyr Glu Pro Ala Asp Arg Ala Arg Glu Val Pro Val Arg Thr Thr Ser
 530 535 540

Arg Ser Pro Val Leu Ser Arg Arg Asp Ser Pro Leu Gln Gly Ser Gly
 545 550 555 560

Gln Gln Asn Ser Gln Ala Gly Gln Arg Asn Ser Thr Ser Ser Ile Glu
 565 570 575

Pro Arg Leu Leu Trp Glu Arg Val Glu Lys Leu Val Pro Arg Pro Gly
 580 585 590

Ser Gly Ser Ser Ser Gly Ser Ser Asn Ser Gly Ser Gln Pro Gly Ser
 595 600 605

His Pro Gly Ser Gln Ser Gly Ser Gly Glu Arg Phe Arg Val Arg Ser
 610 615 620

Ser Ser Lys Ser Glu Gly Ser Pro Ser Gln Arg Leu Glu Asn Ala Val
 625 630 635 640

Lys Lys Pro Glu Asp Lys Lys Glu Val Phe Arg Pro Leu Lys Pro Ala
 645 650 655

Gly Glu Val Asp Leu Thr Ala Leu Ala Lys Glu Leu Arg Ala Val Glu
 660 665 670

Asp Val Arg Pro Pro His Lys Val Thr Asp Tyr Ser Ser Ser Ser Glu
 675 680 685

Glu Ser Gly Thr Thr Asp Glu Glu Asp Asp Asp Val Glu Gln Glu Gly
 690 695 700

Ala Asp Glu Ser Thr Ser Gly Pro Glu Asp Thr Arg Ala Ala Ser Ser
 705 710 715 720

Leu Asn Leu Ser Asn Gly Glu Thr Glu Ser Val Lys Thr Met Ile Val
 725 730 735

His Asp Asp Val Glu Ser Glu Pro Ala Met Thr Pro Ser Lys Glu Gly
 740 745 750

Thr Leu Ile Val Arg Gln Thr Gln Ser Ala Ser Ser Thr Leu Gln Lys
 755 760 765

His Lys Ser Ser Ser Ser Phe Thr Pro Phe Ile Asp Pro Arg Leu Leu
 770 775 780

Gln Ile Ser Pro Ser Ser Gly Thr Thr Val Thr Ser Val Val Gly Phe
 785 790 795 800

Ser Cys Asp Gly Met Arg Pro Glu Ala Ile Arg Gln Asp Pro Thr Arg
 805 810 815

Lys Gly Ser Val Val Asn Val Asn Pro Thr Asn Thr Arg Pro Gln Ser
 820 825 830

Asp Thr Pro Glu Ile Arg Lys Tyr Lys Lys Arg Phe Asn Ser Glu Ile

835		840		845
Leu Cys Ala Ala Leu Trp Gly Val Asn Leu Leu Val Gly Thr Glu Ser				
850		855		860
Gly Leu Met Leu Leu Asp Arg Ser Gly Gln Gly Lys Val Tyr Pro Leu				
865		870		875
				880
Ile Asn Arg Arg Arg Phe Gln Gln Met Asp Val Leu Glu Gly Leu Asn				
		885		890
				895
Val Leu Val Thr Ile Ser Gly Lys Lys Asp Lys Leu Arg Val Tyr Tyr				
		900		905
				910
Leu Ser Trp Leu Arg Asn Lys Ile Leu His Asn Asp Pro Glu Val Glu				
		915		920
				925
Lys Lys Gln Gly Trp Thr Thr Val Gly Asp Leu Glu Gly Cys Val His				
		930		935
				940
Tyr Lys Val Val Lys Tyr Glu Arg Ile Lys Phe Leu Val Ile Ala Leu				
		945		950
				955
				960
Lys Ser Ser Val Glu Val Tyr Ala Trp Ala Pro Lys Pro Tyr His Lys				
		965		970
				975
Phe Met Ala Phe Lys Ser Phe Gly Glu Leu Val His Lys Pro Leu Leu				
		980		985
				990
Val Asp Leu Thr Val Glu Glu Gly Gln Arg Leu Lys Val Ile Tyr Gly				
		995		1000
				1005
Ser Cys Ala Gly Phe His Ala Val Asp Val Asp Ser Gly Ser Val				
		1010		1015
				1020
Tyr Asp Ile Tyr Leu Pro Thr His Val Arg Lys Asn Pro His Ser				
		1025		1030
				1035
Met Ile Gln Cys Ser Ile Lys Pro His Ala Ile Ile Ile Leu Pro				
		1040		1045
				1050
Asn Thr Asp Gly Met Glu Leu Leu Val Cys Tyr Glu Asp Glu Gly				
		1055		1060
				1065
Val Tyr Val Asn Thr Tyr Gly Arg Ile Thr Lys Asp Val Val Leu				
		1070		1075
				1080

Gln Trp Gly Glu Met Pro Thr Ser Val Ala Tyr Ile Arg Ser Asn
 1085 1090 1095

Gln Thr Met Gly Trp Gly Glu Lys Ala Ile Glu Ile Arg Ser Val
 1100 1105 1110

Glu Thr Gly His Leu Asp Gly Val Phe Met His Lys Arg Ala Gln
 1115 1120 1125

Arg Leu Lys Phe Leu Cys Glu Arg Asn Asp Lys Val Phe Phe Ala
 1130 1135 1140

Ser Val Arg Ser Gly Gly Ser Ser Gln Val Tyr Phe Met Thr Leu
 1145 1150 1155

Gly Arg Thr Ser Leu Leu Ser Trp
 1160 1165

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 <212> PRT
 <213> HUMAN

<400> 9

Met Ala Asn Asp Ser Pro Ala Lys Ser Leu Val Asp Ile Asp Leu Ser
 1 5 10 15

Ser Leu Arg Asp Pro Ala Gly Ile Phe Glu Leu Val Glu Val Val Gly
 20 25 30

Asn Gly Thr Tyr Gly Gln Val Tyr Lys Gly Arg His Val Lys Thr Gly
 35 40 45

Gln Leu Ala Ala Ile Lys Val Met Asp Val Thr Glu Asp Glu Glu Glu
 50 55 60

Glu Ile Lys Leu Glu Ile Asn Met Leu Lys Lys Tyr Ser His His Arg
 65 70 75 80

Asn Ile Ala Thr Tyr Tyr Gly Ala Phe Ile Lys Lys Ser Pro Pro Gly
 85 90 95

His Asp Asp Gln Leu Trp Leu Val Met Glu Phe Cys Gly Ala Gly Ser
 100 105 110

Ile Thr Asp Leu Val Lys Asn Thr Lys Gly Asn Thr Leu Lys Glu Asp
 115 120 125

Trp Ile Ala Tyr Ile Ser Arg Glu Ile Leu Arg Gly Leu Ala His Leu
 130 135 140

His Ile His His Val Ile His Arg Asp Ile Lys Gly Gln Asn Val Leu
 145 150 155 160

Leu Thr Glu Asn Ala Glu Val Lys Leu Val Asp Phe Gly Val Ser Ala
 165 170 175

Gln Leu Asp Arg Thr Val Gly Arg Arg Asn Thr Phe Ile Gly Thr Pro
 180 185 190

Tyr Trp Met Ala Pro Glu Val Ile Ala Cys Asp Glu Asn Pro Asp Ala
 195 200 205

Thr Tyr Asp Tyr Arg Ser Asp Leu Trp Ser Cys Gly Ile Thr Ala Ile
 210 215 220

Glu Met Ala Glu Gly Ala Pro Pro Leu Cys Asp Met His Pro Met Arg
 225 230 235 240

Ala Leu Phe Leu Ile Pro Arg Asn Pro Pro Pro Arg Leu Lys Ser Lys
 245 250 255

Lys Trp Ser Lys Lys Phe Phe Ser Phe Ile Glu Gly Cys Leu Val Lys
 260 265 270

Asn Tyr Met Gln Arg Pro Ser Thr Glu Gln Leu Leu Lys His Pro Phe
 275 280 285

Ile Arg Asp Gln Pro Asn Glu Arg Gln Val Arg Ile Gln Leu Lys Asp
 290 295 300

His Ile Asp Arg Thr Arg Lys Lys Arg Gly Glu Lys Asp Glu Thr Glu
 305 310 315 320

Tyr Glu Tyr Ser Gly Ser Glu Glu Glu Glu Glu Glu Val Pro Glu Gln
 325 330 335

Glu Gly Glu Pro Ser Ser Ile Val Asn Val Pro Gly Glu Ser Thr Leu
 340 345 350

Arg Arg Asp Phe Leu Arg Leu Gln Gln Glu Asn Lys Glu Arg Ser Glu

355	360	365
Ala Leu Arg Arg Gln Gln Leu Leu Gln Glu Gln Gln Leu Arg Glu Gln 370 375 380		
Glu Glu Tyr Lys Arg Gln Leu Leu Ala Glu Arg Gln Lys Arg Ile Glu 385 390 395 400		
Gln Gln Lys Glu Gln Arg Arg Arg Leu Glu Glu Gln Gln Arg Arg Glu 405 410 415		
Arg Glu Ala Arg Arg Gln Gln Glu Arg Glu Gln Arg Arg Arg Glu Gln 420 425 430		
Glu Glu Lys Arg Arg Leu Glu Glu Leu Glu Arg Arg Arg Lys Glu Glu 435 440 445		
Glu Glu Arg Arg Arg Ala Glu Glu Glu Lys Arg Arg Val Glu Arg Glu 450 455 460		
Gln Glu Tyr Ile Arg Arg Gln Leu Glu Glu Glu Gln Arg His Leu Glu 465 470 475 480		
Val Leu Gln Gln Gln Leu Leu Gln Glu Gln Ala Met Leu Leu Glu Cys 485 490 495		
Arg Trp Arg Glu Met Glu Glu His Arg Gln Ala Glu Arg Leu Gln Arg 500 505 510		
Gln Leu Gln Gln Glu Gln Ala Tyr Leu Leu Ser Leu Gln His Asp His 515 520 525		
Arg Arg Pro His Pro Gln His Ser Gln Gln Pro Pro Pro Pro Gln Gln 530 535 540		
Glu Arg Ser Lys Pro Ser Phe His Ala Pro Glu Pro Lys Ala His Tyr 545 550 555 560		
Glu Pro Ala Asp Arg Ala Arg Glu Val Glu Asp Arg Phe Arg Lys Thr 565 570 575		
Asn His Ser Ser Pro Glu Ala Gln Ser Lys Gln Thr Gly Arg Val Leu 580 585 590		
Glu Pro Pro Val Pro Ser Arg Ser Glu Ser Phe Ser Asn Gly Asn Ser 595 600 605		

Glu Ser Val His Pro Ala Leu Gln Arg Pro Ala Glu Pro Gln Val Pro
610 615 620

Val Arg Thr Thr Ser Arg Ser Pro Val Leu Ser Arg Arg Asp Ser Pro
625 630 635 640

Leu Gln Gly Ser Gly Gln Gln Asn Ser Gln Ala Gly Gln Arg Asn Ser
645 650 655

Thr Ser Ile Glu Pro Arg Leu Leu Trp Glu Arg Val Glu Lys Leu Val
660 665 670

Pro Arg Pro Gly Ser Gly Ser Ser Ser Gly Ser Ser Asn Ser Gly Ser
675 680 685

Gln Pro Gly Ser His Pro Gly Ser Gln Ser Gly Ser Gly Glu Arg Phe
690 695 700

Arg Val Arg Ser Ser Ser Lys Ser Glu Gly Ser Pro Ser Gln Arg Leu
705 710 715 720

Glu Asn Ala Val Lys Lys Pro Glu Asp Lys Lys Glu Val Phe Arg Pro
725 730 735

Leu Lys Pro Ala Asp Leu Thr Ala Leu Ala Lys Glu Leu Arg Ala Val
740 745 750

Glu Asp Val Arg Pro Pro His Lys Val Thr Asp Tyr Ser Ser Ser Ser
755 760 765

Glu Glu Ser Gly Thr Thr Asp Glu Glu Asp Asp Asp Val Glu Gln Glu
770 775 780

Gly Ala Asp Glu Ser Thr Ser Gly Pro Glu Asp Thr Arg Ala Ala Ser
785 790 795 800

Ser Leu Asn Leu Ser Asn Gly Glu Thr Glu Ser Val Lys Thr Met Ile
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Val His Asp Asp Val Glu Ser Glu Pro Ala Met Thr Pro Ser Lys Glu
820 825 830

Gly Thr Leu Ile Val Arg Arg Thr Gln Ser Ala Ser Ser Thr Leu Gln
835 840 845

Lys His Lys Ser Ser Ser Ser Phe Thr Pro Phe Ile Asp Pro Arg Leu
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Leu Gln Ile Ser Pro Ser Ser Gly Thr Thr Val Thr Ser Val Val Gly
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Phe Ser Cys Asp Gly Met Arg Pro Glu Ala Ile Arg Gln Asp Pro Thr
 885 890 895

Arg Lys Gly Ser Val Val Asn Val Asn Pro Thr Asn Thr Arg Pro Gln
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Ser Asp Thr Pro Glu Ile Arg Lys Tyr Lys Lys Arg Phe Asn Ser Glu
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Ile Leu Cys Ala Ala Leu Trp Gly Val Asn Leu Leu Val Gly Thr Glu
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Ser Gly Leu Met Leu Leu Asp Arg Ser Gly Gln Gly Lys Val Tyr Pro
 945 950 955 960

Leu Ile Asn Arg Arg Arg Phe Gln Gln Met Asp Val Leu Glu Gly Leu
 965 970 975

Asn Val Leu Val Thr Ile Ser Gly Lys Lys Asp Lys Leu Arg Val Tyr
 980 985 990

Tyr Leu Ser Trp Leu Arg Asn Lys Ile Leu His Asn Asp Pro Glu Val
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Glu Lys Lys Gln Gly Trp Thr Thr Val Gly Asp Leu Glu Gly Cys
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Val His Tyr Lys Val Val Lys Tyr Glu Arg Ile Lys Phe Leu Val
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Ile Ala Leu Lys Ser Ser Val Glu Val Tyr Ala Trp Ala Pro Lys
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Pro Tyr His Lys Phe Met Ala Phe Lys Ser Phe Gly Glu Leu Val
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His Lys Pro Leu Leu Val Asp Leu Thr Val Glu Glu Gly Gln Arg
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Leu Lys Val Ile Tyr Gly Ser Cys Ala Gly Phe His Ala Val Asp
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Val Asp Ser Gly Ser Val Tyr Asp Ile Tyr Leu Pro Thr His Ile
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Gln Cys Ser Ile Lys Pro His Ala Ile Ile Ile Leu Pro Asn Thr
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Asp Gly Met Glu Leu Leu Val Cys Tyr Glu Asp Glu Gly Val Tyr
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Val Asn Thr Tyr Gly Arg Ile Thr Lys Asp Val Val Leu Gln Trp
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Met Gly Trp Gly Glu Lys Ala Ile Glu Ile Arg Ser Val Glu Thr
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Gly His Leu Asp Gly Val Phe Met His Lys Arg Ala Gln Arg Leu
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Lys Phe Leu Cys Glu Arg Asn Asp Lys Val Phe Phe Ala Ser Val
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Pro Glu Asp Ser Trp Leu Lys Phe Arg Ser Glu Asn Asn Cys Phe Leu
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Tyr Gly Val Phe Asn Gly Tyr Asp Gly Asn Arg Val Thr Asn Phe Val
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Ala Gln Arg Leu Ser Ala Glu Leu Leu Leu Gly Gln Leu Asn Ala Glu
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His Ala Glu Ala Asp Val Arg Arg Val Leu Leu Gln Ala Phe Asp Val
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Val Glu Arg Ser Phe Leu Glu Ser Ile Asp Asp Ala Leu Ala Glu Lys
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Ala Ser Leu Gln Ser Gln Leu Pro Glu Gly Val Pro Gln His Gln Leu
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Pro Pro Gln Tyr Gln Lys Ile Leu Glu Arg Leu Lys Thr Leu Glu Arg
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Glu Ile Ser Gly Gly Ala Met Ala Val Val Ala Val Leu Leu Asn Asn
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Lys Leu Tyr Val Ala Asn Val Gly Thr Asn Arg Ala Leu Leu Cys Lys
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Ser Thr Val Asp Gly Leu Gln Val Thr Gln Leu Asn Val Asp His Thr
 195 200 205

Thr Glu Asn Glu Asp Glu Leu Phe Arg Leu Ser Gln Leu Gly Leu Asp
 210 215 220

Ala Gly Lys Ile Lys Gln Val Gly Ile Ile Cys Gly Gln Glu Ser Thr
 225 230 235 240

Arg Arg Ile Gly Asp Tyr Lys Val Lys Tyr Gly Tyr Thr Asp Ile Asp
 245 250 255

Leu Leu Ser Ala Ala Lys Ser Lys Pro Ile Ile Ala Glu Pro Glu Ile
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His Gly Ala Gln Pro Leu Asp Gly Val Thr Gly Phe Leu Val Leu Met
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Ser Glu Gly Leu Tyr Lys Ala Leu Glu Ala Ala His Gly Pro Gly Gln
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Ala Asn Gln Glu Ile Ala Ala Met Ile Asp Thr Glu Phe Ala Lys Gln
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Thr Ser Leu Asp Ala Val Ala Gln Ala Val Val Asp Arg Val Lys Arg
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Ile His Ser Asp Thr Phe Ala Ser Gly Gly Glu Arg Ala Arg Phe Cys
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Pro Arg His Glu Asp Met Thr Leu Leu Val Arg Asn Phe Gly Tyr Pro
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Leu Gly Glu Met Ser Gln Pro Thr Pro Ser Pro Ala Pro Ala Ala Gly
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Gly Arg Val Tyr Pro Val Ser Val Pro Tyr Ser Ser Ala Gln Ser Thr
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Ser Lys Thr Ser Val Thr Leu Ser Leu Val Met Pro Ser Gln Gly Gln
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Met Val Asn Gly Ala His Ser Ala Ser Thr Leu Asp Glu Ala Thr Pro
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Thr Leu Thr Asn Gln Ser Pro Thr Leu Thr Leu Gln Ser Thr Asn Thr
 435 440 445

His Thr Gln Ser Ser Ser Ser Ser Ser Asp Gly Gly Leu Phe Arg Ser
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Arg Pro Ala His Ser Leu Pro Pro Gly Glu Asp Gly Arg Val Glu Pro
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Tyr Val Asp Phe Ala Glu Phe Tyr Arg Leu Trp Ser Val Asp His Gly
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Glu Arg Asn Val Ala Ile Lys Lys Leu Ser Arg Pro Phe Gln Asn Gln
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Thr His Ala Lys Arg Ala Tyr Arg Glu Leu Val Leu Met Lys Cys Val
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Asn His Lys Asn Ile Ile Gly Leu Leu Asn Val Phe Thr Pro Gln Lys
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Ser Leu Glu Glu Phe Gln Asp Val Tyr Ile Val Met Glu Leu Met Asp
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Ala Asn Leu Cys Gln Val Ile Gln Met Glu Leu Asp His Glu Arg Met
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Ser Tyr Leu Leu Tyr Gln Met Leu Cys Gly Ile Lys His Leu His Ser
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Ser Asp Cys Thr Leu Lys Ile Leu Asp Phe Gly Leu Ala Arg Thr Ala
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Lys Glu Leu Ile Tyr Lys Glu Val Met Asp Leu Glu Glu Arg Thr Lys
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Asn Gly Ser Gln His Pro Ser Ser Ser Ser Ser Val Asn Asp Val Ser
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